Claims

What is claimed is:

1. A method of operating a track-type machine having a drive wheel and an idler, the method comprising:

operating the drive wheel to advance a drive track around the drive wheel and the idler thereby moving the track-type machine;

determining a force to be applied to the idler based on a direction of operation of the drive wheel; and

applying the force to the idler.

2. The method of claim 1, further including varying the force applied to the idler as a function of a drawbar load of the machine.

3. The method of claim 1, further including sensing a pressure of fluid being used to operate the drive wheel, wherein said determining a force includes determining the force based on the sensed pressure of fluid being used to operate the drive wheel.

4. The method of claim 1, wherein said determining a force includes selecting a recoil curve, sensing a position of the idler, and selecting the force to be applied based on a point on the selected recoil curve that corresponds to the sensed position of the idler on the selected recoil curve.

5. The method of claim 4, wherein the direction of operation is in a direction from the drive wheel toward the idler.

6. The method of claim 1, further including sensing a pressure of fluid being used to operate the drive wheel, and

wherein said determining a force includes selecting a recoil curve from a plurality of recoil curves based on the sensed pressure of fluid being used to operate the drive wheel, sensing a position of the idler, and selecting the force to be applied based on a point on the selected recoil curve that corresponds to the sensed position of the idler on the selected recoil curve.

7. The method of claim 6, wherein the direction of operation is in a direction from the idler toward the drive wheel.

8. The method of claim 1, wherein said applying the force includes operating a valve assembly to control fluid pressure within an actuator associated with the idler.

9. The method of claim 1, wherein said determining a force includes determining a first force when the drive wheel is operated in a direction from the drive wheel toward the idler and determining a second force when the drive wheel is operated in a direction from the idler toward the drive wheel.

10. A work machine, comprising:

a source of pressurized fluid;

a fluid reservoir;

a drive track;

an idler;

a drive wheel, the drive wheel being operable to advance the drive track around the drive wheel and the idler;

an actuator mechanically coupled to the idler, the actuator being operable to increase and decrease a force being applied to the idler;

a valve assembly operable to control fluid flow from the source of pressurized fluid to the actuator and from the actuator to the fluid reservoir; and

a controller configured to operate the valve assembly to apply a force to the idler based on a direction of operation of the drive wheel.

11. The work machine of claim 10, wherein the controller is configured to operate the valve assembly to vary the force applied to the idler as a function of a drawbar load of the machine.

12. The work machine of claim 10, further including a pressure sensor configured to sense the pressure of fluid being directed from the source of pressurized fluid to the drive wheel, and wherein the controller is configured to operate the valve assembly to apply the force to the idler based on the sensed pressure of fluid being directed to the drive wheel.

13. The work machine of claim 10, further including a position sensor configured to sense a position of the idler, and

wherein the controller is configured to operate the valve assembly to apply the force to the idler by selecting a recoil curve and selecting the force to be applied to the idler based on a point on the selected recoil curve that corresponds to the sensed position of the idler on the selected recoil curve.

14. The work machine of claim 10, further including a pressure sensor configured to sense the pressure of fluid being directed from the source of pressurized fluid to the drive wheel and a position sensor configured to sense a position of the idler, and

wherein the controller is configured to operate the valve assembly to apply the force to the idler by selecting a recoil curve from a plurality of recoil curves based on the sensed pressure of fluid being directed to the drive wheel and selecting the force to be applied to the idler based on a point on the selected recoil curve that corresponds to the sensed position of the idler on the selected recoil curve.

15. The work machine of claim 10, wherein the drive wheel is operable to advance the drive track in a first direction that is associated with movement of the work machine in a direction from the drive wheel toward the idler and in a second opposing direction that is associated with movement of the work machine in a direction from the idler toward the drive wheel, and

wherein the controller is configured to operate the valve assembly to apply a first force when the drive wheel is operated in the first direction and a second force when the drive wheel is operated in the second direction.

16. A method of operating a track-type machine having a drive wheel at a first end of the track-type machine and an idler at a second end of the track-type machine, the method comprising:

operating a drive wheel to advance a drive track around the drive wheel and the idler thereby moving the track-type machine, the drive wheel being operable in a first direction associated with movement of the track-type machine in a direction from the drive wheel toward the idler and in a second direction associated with movement of the track-type machine in a direction from the idler toward the drive wheel;

determining a force to be applied to the idler based on a direction of operation of the drive wheel and, when the drive wheel is operated in the

second direction, on a sensed pressure of fluid being used to operate the drive wheel and a sensed position of the idler; and

applying the force to the idler.